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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/870,387      | 05/29/2001  | Carl J. G. Evertsz   | 739-X01-005         | 7493             |

27317 7590 10/04/2006

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EXAMINER

SUBRAMANIAN, NARAYANSWAMY

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

3692

DATE MAILED: 10/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                          |                |  |
|------------------------------|--------------------------|----------------|--|
| <b>Office Action Summary</b> | Application No.          | Applicant(s)   |  |
|                              | 09/870,387               | EVERTSZ ET AL. |  |
|                              | Examiner                 | Art Unit       |  |
|                              | Narayanswamy Subramanian | 3628           |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 8,9,14,15,17,18 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7,10-13,16,19 and 21-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This office action is in response to applicant's communication of July 26, 2006. Applicant's election of Species 1A drawn to claims 1-7, 10-13, 16, 19 and 21-27, with traverse is acknowledged by the examiner. Claims 8, 9, 14, 15, 17, 18 and 20 are withdrawn from consideration as being drawn to a non-elected species. Claims 1-7, 10-13, 16, 19 and 21-27 have been examined. The rejections and response to arguments are stated below.

#### **Claim Rejections - 35 USC § 101**

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-7, 10-13, 16, 19 and 21-27 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory Subject matter.

35 USC 101 requires that in order to be patentable the invention must be a "new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof" (emphasis added).

Claims 1-7, 10-13, 16, 19 and 21-27 are drawn to "a method for computing a point in a phase space" and to "a method for computing a curve in a phase space". As such the claimed invention does not fall within at least one of the four categories of patent eligible subject matter recited in 35 U.S.C. 101, that is a process, machine, manufacture, or composition of matter.

Claims 1-7, 10-13, 16, 19 and 21-27 are drawn to "a method for computing a point in a phase space" and to "a method for computing a curve in a phase space". As such the claimed invention is directed to a judicial exception to 35 U.S.C. 101 (i.e., an abstract idea, natural phenomenon, or law of nature) and is not directed to a practical application of such judicial

exception because the claims do not require any physical transformation and the invention as claimed does not produce a useful, concrete, and tangible result.

The Court of Appeals for the Federal Circuit issued opinions in *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, 149 F. 3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998) and *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 50 USPQ2d 1447 (Fed. Cir. 1999). These decisions explained that, to be eligible for patent protection, the claimed invention as a whole must accomplish a practical application. That is, it must produce a “useful, concrete and tangible result.” *State Street*, 149 F.3d at 1373-74, 47 USPQ2d at 1601 02. To satisfy section 101 requirements, the claim must be for a practical application of the § 101 judicial exception, which can be identified in various ways: (a) The claimed invention “transforms” an article or physical object to a different state or thing. (b) The claimed invention otherwise produces a useful, concrete and tangible result, based on the factors discussed below.

The USPTO’s official interpretation of the utility requirement provides that the utility of an invention has to be (i) specific, (ii) substantial and (iii) credible. See MPEP § 2107.

The tangible requirement does require that the claim must recite more than a § 101 judicial exception, in that the process claim must set forth a practical application of that § 101 judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had “no substantial practical application”).

For an invention to produce a “concrete” result, the process must have a result that can be substantially repeatable or the process must substantially produce the same result again. In re Swartz, 232 F.3d 862, 864, 56 USPQ2d 1703, 1704 (Fed. Cir. 2000) (where asserted result

produced by the claimed invention is “irreproducible” claim should be rejected under section 101). The opposite of “concrete” is unrepeatable or unpredictable.

There is no useful, concrete and tangible result produced from implementing the steps of the claimed invention. The dependent claims are rejected for the same reason and by way of dependency on a rejected independent claim.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 1-7, 10-13, 16, 19 and 21-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 21, 23 and 25 recite the limitation “calculating a difference between a first data sample and a last data sample of the first sequence”. However it is not clear as to what “difference” is being calculated. Hence the scope of the claim is not clear. Claims 2-7, 10-13, 16, 19, 22, 24 and 26-27 are rejected by dependency on a rejected independent claim. Appropriate clarification/correction is required.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-7, 10-13, 16, 19 and 21-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart (US Patent 6,195,103 B1)

Claims 1, 23 and 25, Stewart teaches a method, system and a computer program product for use on a client computer, the method comprising: providing a first sequence of first data samples (See Col 3 line 32 – Col 5 line 4); calculating a volatility of the first sequence of first data samples (See Col 3 line 32 – Col 5 line 4); scaling the volatility with a factor, the factor being dependent on the length of the first sequence(See Col 3 line 32 – Col 5 line 4); calculating a difference between a first data sample and a last data sample of the first sequence(See Col 3 line 32 – Col 5 line 4). A system for performing these steps and a computer program product for use on a client computer are inherent in the disclosure.

Stewart does not explicitly teach the step of determining a first and a second coordinate value of a point in phase space based on the volatility and the difference.

Caccavale teaches the step of determining a first and a second coordinate value of a point in phase space based on the volatility and the difference (See disclosure of Caccavale).

Both Stewart and Caccavale are concerned with displaying time series data to the user. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Stewart to include the teachings of Caccavale. The combination suggests that users would have benefited from rapid and accurate analysis of volatility (See Stewart Col 3 lines 11-15).

Claim 21, Stewart teaches a method computing a curve in a phase space, the method comprising the steps of: providing a first sequence s of first data samples (See Col 3 line 32 – Col 5 line 4); determining a set of sub-sequences s.sub.0 to s.sub.K-1 of the first sequence (See Col 3 line 32 – Col 5 line 4); calculating a volatility of the sub-sequence s.sub.i for each sub-

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sequence  $s.sub.i$  of the set of sub-sequences  $s.sub.0$  to  $s.sub.K-1$  (See Col 3 line 32 – Col 5 line 4); scaling the volatility with a factor dependent on the length of the sub-sequence  $s.sub.i$  (See Col 3 line 32 – Col 5 line 4); calculating a difference between the first data sample and the last data sample of the sub-sequence  $s.sub.i$  (See Col 3 line 32 – Col 5 line 4).

Stewart does not explicitly teach the step of determining a first and a second coordinate values of points of a curve in phase space based on the volatilities and the differences.

Caccavale teaches the step of determining a first and a second coordinate values of points of a curve in phase space based on the volatility and the difference (See disclosure of Caccavale).

Both Stewart and Caccavale are concerned with displaying time series data to the user. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Stewart to include the teachings of Caccavale. The combination suggests that users would have benefited from rapid and accurate analysis of volatility (See Stewart Col 3 lines 11-15).

Claims 2-7, 10-13, 16, 19, 22, 24 and 26-27, the features in these claims are either disclosed by the combination or are old and well known. The inclusion of these features would help make the computation more robust and efficient.

### ***Response to Arguments***

8. Applicant's arguments with regards to restriction of species have been considered but are not persuasive.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


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(a) Bay Jr. (US Patent 5,347,452) Method for providing a visual display of current trading volume and cumulative average trading volume for pre-selected time intervals.

(b) Druck (US Patent 6,477,553 B1) (November 5, 2002) Measurement scale for non-uniform data sampling in N-dimensions.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Narayanswamy Subramanian whose telephone number is (571) 272-6751. The examiner can normally be reached Monday-Thursday from 8:30 AM to 7:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung Sub Sough can be reached at (571) 272-6799. The fax number for Formal or Official faxes and Draft to the Patent Office is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PMR or Public PAIR. Status information for unpublished applications is available through Private PMR only. For more information about the PMR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Dr. N. Subramanian  
September 28, 2006